

ABSTRACT

In fiber reinforced resin composite material, in order to reduce a coefficient of linear expansion to relatively small, particularly to zero, two kind or more than reinforced fibers are combined, wherein at least one reinforced fiber with a negative coefficient of linear expansion is included, prepreg sheet formed them are laminated so as to provide in-plane quasi-isotropic plate. Thus, a total coefficient of linear expansion of fiber reinforced resin composite material is controlled to zero.

A coefficient of linear expansion of doubling yarn and combing wool combined by two kind or more than reinforced fibers is controlled, a coefficient of linear expansion of prepreg sheet formed by these fiber bundles is controlled or a coefficient of linear expansion of fiber bundles formed by two kinds or more than reinforced fibers is controlled by previously controlling the coefficient of linear expansion of the fiber bundles and considering an influence caused by a three dimensional structure of doubling yarn and textile. As the result, the coefficient of linear expansion of the composite material can be reduced as less as possible.

09720372-030900